

**MULTIPLE HEAD AUTOMATED COMPOSITE LAMINATING MACHINE FOR
THE FABRICATION OF LARGE BARREL SECTION COMPONENTS**

ABSTRACT OF THE DISCLOSURE

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An aircraft part manufacturing device for automated composite lamination on a mandrel surface of a tool having a rotational axis includes a mechanical supporting structure that supports multiple material delivery heads. The tool is moveable and rotatable relative to the mechanical supporting structure. The
10 mechanical supporting structure provides for axial translation of the material delivery heads relative to the mandrel surface while the mandrel surface is rotated for laying down courses of composite material over the entire mandrel surface of the tool. The position and movement of each of the plurality of material delivery heads is individually adjustable. Arm mechanisms provide
15 motion of each material delivery head in a direction normal to the mandrel surface; rotation about an axis normal to the mandrel surface; circumferential position adjustment in a hoop direction relative to the mandrel surface; and axial position adjustment relative to the other material delivery heads.